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Oshawa – General Motors
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Let's talk about cars

Standing beside an original McLaughlin-Buick of 1908 E. H. Walker, President and General Manager of General Motors of Canada talks about the beginning and growth of the automotive industry in Canada.

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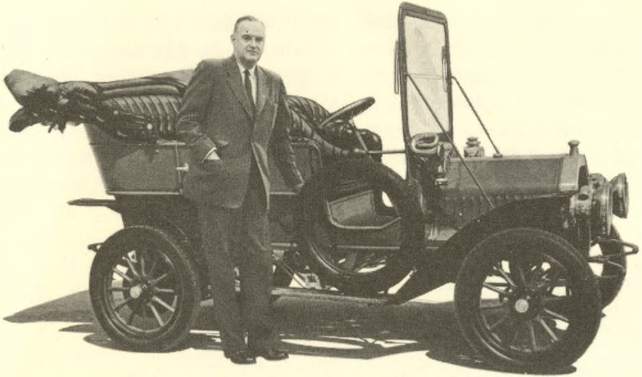

Let's start at the beginning

Like most other great industries of today, General Motors of Canada had a quite humble beginning.

In the seventies of the last century a carriage maker opened a carriage plant first at Enniskillen, Ontario and then at Oshawa. His name was Robert McLaughlin. He was a remarkable man—far-seeing and determined—and he staked his entire business career on a reputation for making the very finest carriages, buggies and sleighs available. It was his carriage firm that later became the McLaughlin Motor Car Company and then, General Motors of Canada. And it was his maxim: "We make one grade only and that the best" that has remained the working philosophy of the company ever since.

Robert McLaughlin's two sons, George W. and R. Samuel McLaughlin both entered the family business. And it was on their advice that the company began manufacturing cars in 1908. At that

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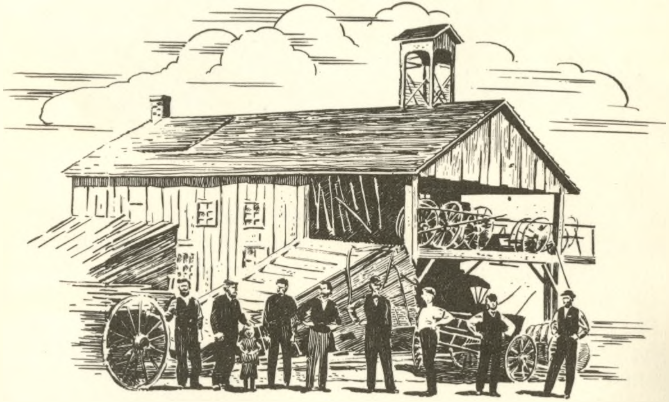
R. S. McLaughlin

time, when cars were still considered novel playthings for eccentrics, deciding to make them was a very bold venture. But the company went ahead and, with sole manufacturing rights to Buick in Canada, 198 McLaughlin-Buick Model F's were made in the first year of production.

That General Motors of Canada can now make that many cars in less than three hours is an indication of the amazing changes that have taken place in manufacturing techniques over the years. Even more remarkable is the fact that, while it took thirty years to make the first million cars, it took only thirteen years to make the second million, five and a half years for the third million and but five years for the fourth million, completed in June, 1961.

The years, however, have seen many such signs of astounding growth. When Mr. R. S. McLaughlin worked as an apprentice with his father there were very few men employed at the plant. Today, General Motors of Canada employs more than 13,000 people at Oshawa and Windsor alone. Today's wage bill is approximately $73,000,000 a year and for supplies and services we pay our 4,000 Canadian suppliers a total of about $400,000,000 every year.

Mr. R. S. McLaughlin, who is recognized as the father of the Canadian automobile industry, is still active with the company. When the McLaughlin Motor Car Com-

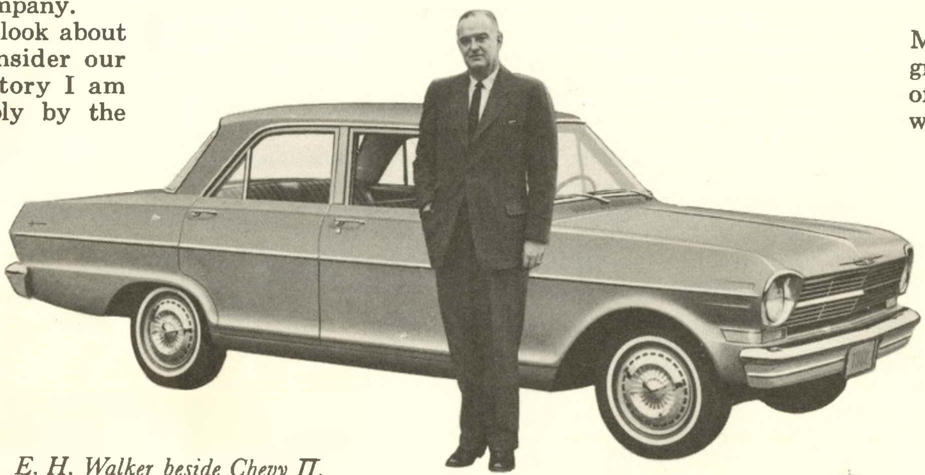


The carriage plant at Enniskillen, Ont.

pany and the Chevrolet Motor Car Company (which was launched by the McLaughlins in 1915) were merged into General Motors of Canada in 1918, he became the first president of the company.

When I, myself, look about me today and consider our General Motors story I am struck most forcibly by the fact that it is a story of people and progress. We build a great many cars today because a great many people like and want GM cars. Two of these—the Chevy II and the Acadian—were introduced only this year. And the whole 'miracle' of producing them is due to the work of literally thousands and thousands of people—men and women in our own plants, those at suppliers', in dealers', among people who transport for us and supply power—people all over Canada.

Every growth of General Motors is another part of the growing and impressive story of Canada itself and Canadians who live here.

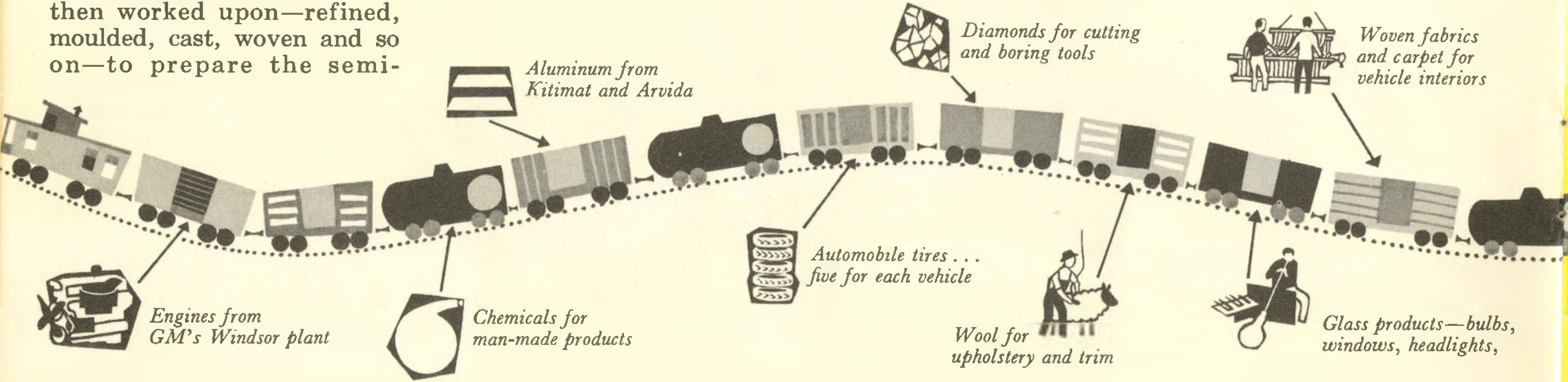

E. H. Walker beside Chevy II.

a car begins in a thousand different places...

and many thousands of hands play a part in making it—long before actual assembly operations start in the vast General Motors plants at Oshawa.

Many basic raw materials must be produced—iron ore must be mined, chemicals synthesized, wool sheared. These must be transported and then worked upon—refined, moulded, cast, woven and so on—to prepare the semi-finished materials from which the more than 4,000 GM suppliers in Canada will make many of the materials and parts that are used on the line.

An order for a new car is, directly and indirectly, an order for more of the products and services of countless Canadians. There are few Canadian industries which do not play some role and benefit to some extent. GM's orders run from aluminum to diamond boring tools, from headlight bulbs to billiard table brushes (for fabric cleaning). In an average year GM spends over $1,000,000 in each of 10 Canadian cities, more than $100,000 in each of 47 other Canadian cities and towns, and more than $10,000 in each of a further 77 communities—all for the materials and services used to produce its many thousands of cars and trucks.



Aluminum from Kitimat and Arvida

Diamonds for cutting and boring tools

Woven fabrics and carpet for vehicle interiors

Engines from GM's Windsor plant

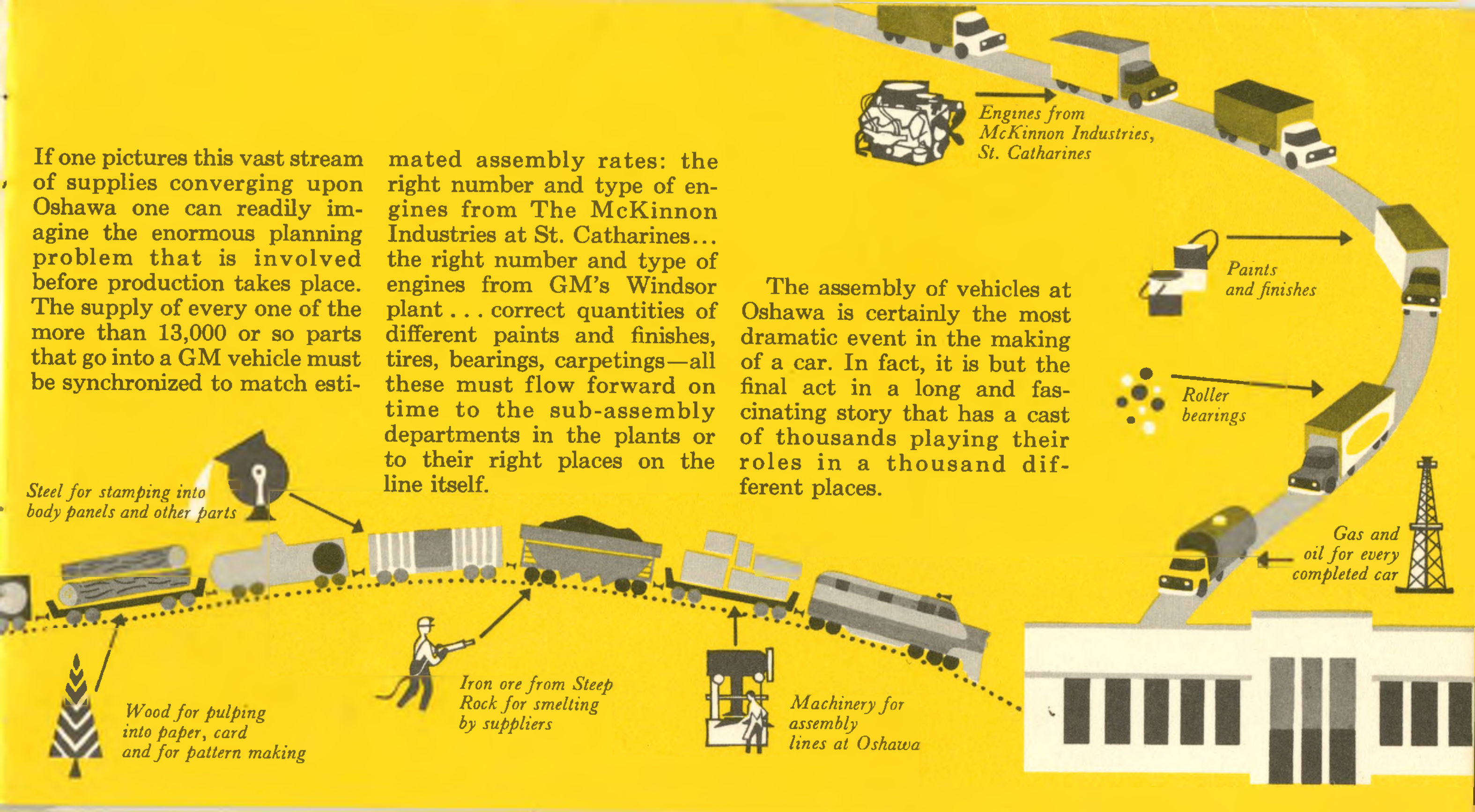
Chemicals for man-made products

Automobile tires . . . five for each vehicle

Wool for upholstery and trim

Glass products—bulbs, windows, headlights, If one pictures this vast stream of supplies converging upon Oshawa one can readily imagine the enormous planning problem that is involved before production takes place. The supply of every one of the more than 13,000 or so parts that go into a GM vehicle must be synchronized to match estimated assembly rates: the right number and type of engines from The McKinnon Industries at St. Catharines... the right number and type of engines from GM's Windsor plant . . . correct quantities of different paints and finishes, tires, bearings, carpetings—all these must flow forward on time to the sub-assembly departments in the plants or to their right places on the line itself.

The assembly of vehicles at Oshawa is certainly the most dramatic event in the making of a car. In fact, it is but the final act in a long and fascinating story that has a cast of thousands playing their roles in a thousand different places.



Engines from McKinnon Industries, St. Catharines

Paints and finishes

Roller bearings

Gas and oil for every completed car

Steel for stamping into body panels and other parts

Wood for pulping into paper, card and for pattern making

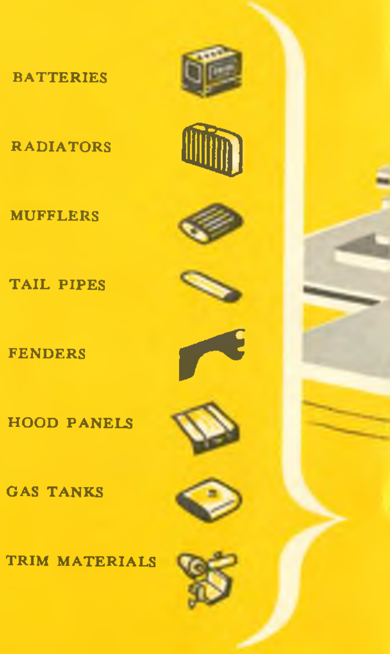
Iron ore from Steep Rock for smelting by suppliers

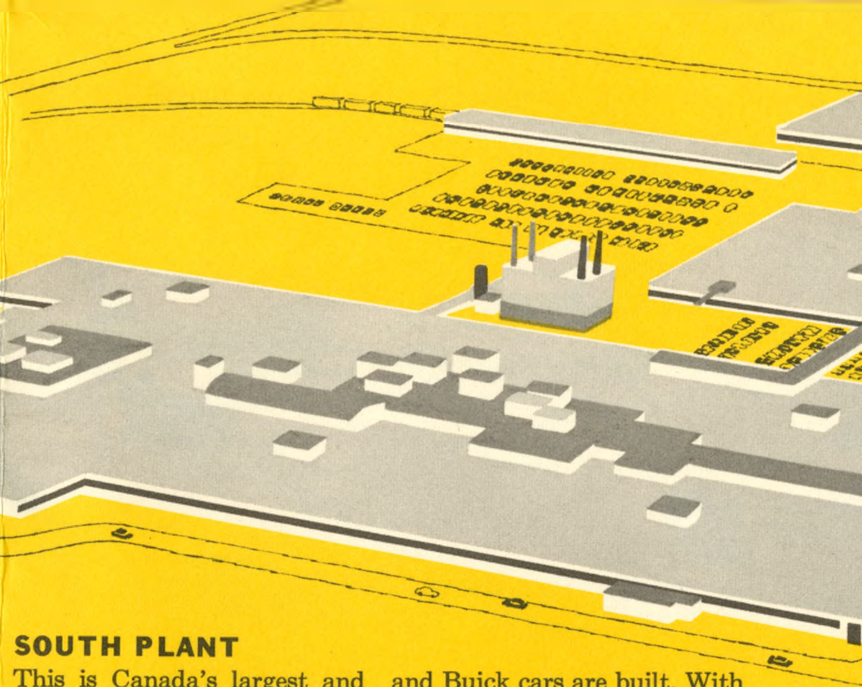
Machinery for assembly lines at Oshawa

General Motors assembly plants at Oshawa

NORTH PLANT

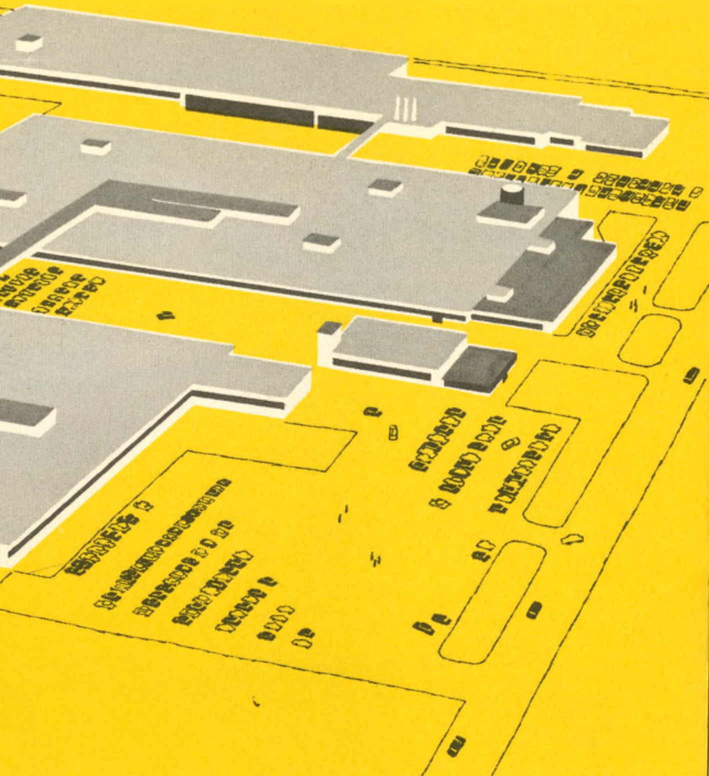
This plant has a floor area of 60 acres. Here (as shown at right) many manufacturing and fabrication operations for GM cars and trucks are carried out and the full assembly of Chevrolet and GMC trucks takes place. Since the first car was built in Oshawa over 4,000,000 vehicles have been produced in the two GM plants here. GM produces more than half of all the new cars and trucks built in Canada.

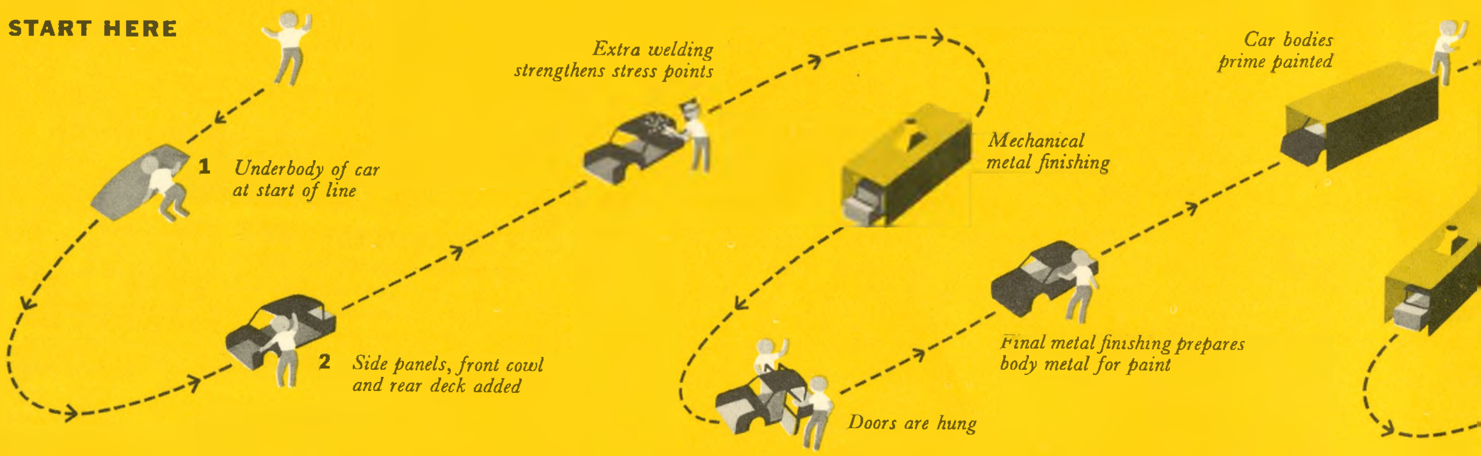




SOUTH PLANT

This is Canada's largest and most modern automobile assembly plant where Chevrolet, Chevy II, Corvair, Pontiac, Acadian, Oldsmobile and Buick cars are built. With a total useable floor area of 87 acres, this plant includes a 25-acre parts distribution warehouse.

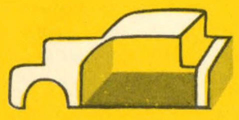



START HERE
1 Underbody of car at start of line
2 Side panels, front cowl and rear deck added
Extra welding strengthens stress points
Mechanical metal finishing
Doors are hung
Final metal finishing prepares body metal for paint
Car bodies prime painted

Here's how a car is put together...

5 Chassis frame at start of line

1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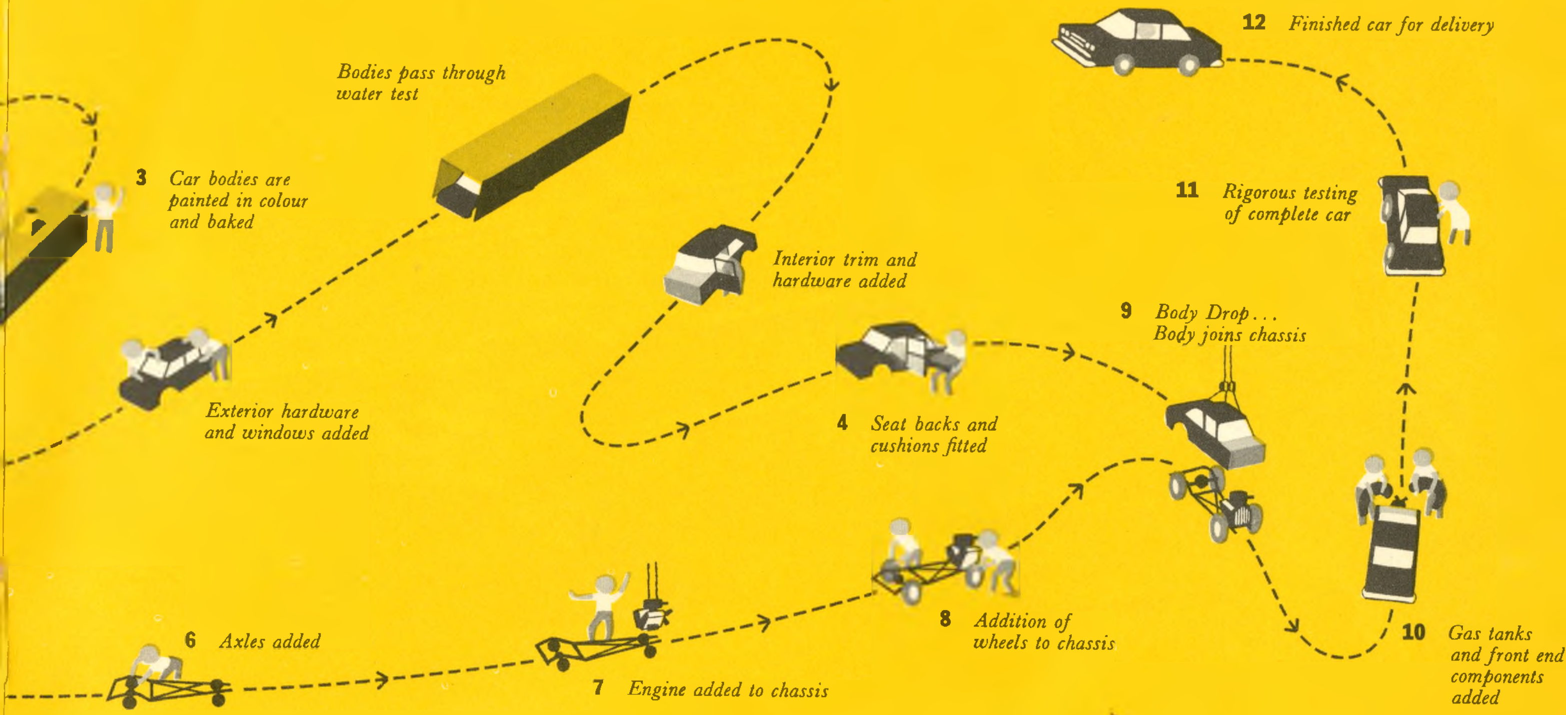
Let's follow the main steps...

The body begins to take shape **1.** Here the side panels, front cowl and rear deck are welded to the floor panel. The roof is added **2.** All points of greatest stress are strengthened by countless extra welds. When the doors and trunk lids are hung and adjusted, extensive metal finishing smooths all exterior surfaces. Then the body enters the paint shop and, after applications of rust inhibitor and the first prime coat, it is sealed against dust and water. The equivalent of seven coats of the highest quality paint is applied **3.**

After painting, body mouldings and windows are added, followed by interior trim, instrument clusters, arm rest and seat assemblies. Now the body is ready to be transferred over the conveyor bridge to the final assembly plant **4.**

In the final assembly plant, the car chassis has been


Bodies pass through water test
12 Finished car for delivery
3 Car bodies are painted in colour and baked
11 Rigorous testing of complete car
Interior trim and hardware added
9 Body Drop . . . Body joins chassis
Exterior hardware and windows added
4 Seat backs and cushions fitted
6 Axles added
8 Addition of wheels to chassis
10 Gas tanks and front end components added
7 Engine added to chassis

9

10

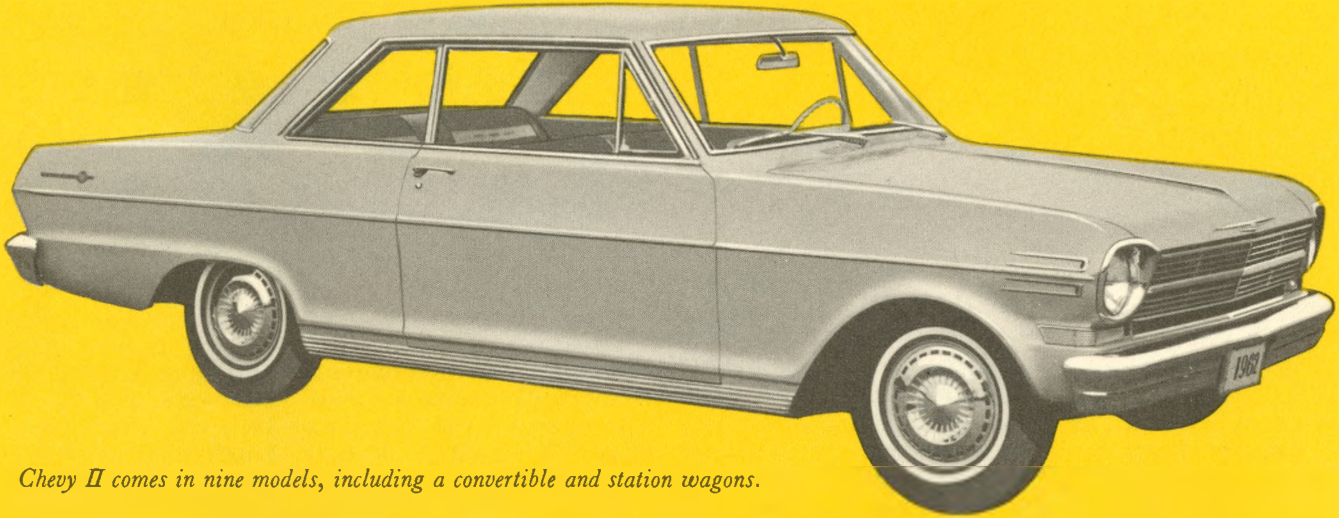
11

12

assembled. To the chassis frame **5.** front and rear axles have been first bolted **6.** The engine, propeller shaft, tail pipe and muffler have been added **7.** and the wheels with tires mounted and correctly inflated, are installed **8.** The radiator is added. Now comes the truly dramatic moment when the car body meets its matching chassis **9.** The body is lowered to the chassis from an overhead bridge. Gas tanks and front-end components (front fenders, grille and headlamps) are installed and, once filled with fuel, the car is ready to run **10.**

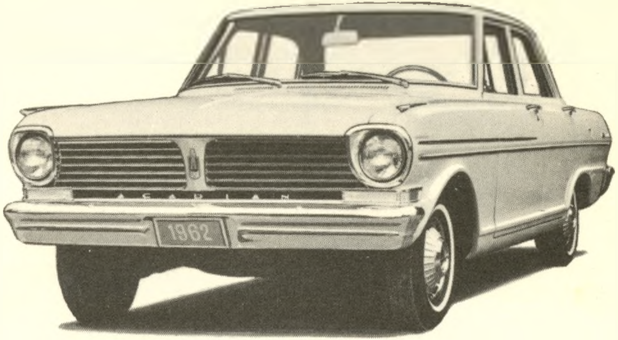
Rigorous testing takes place **11.** The car is driven at high speeds standing still on the roll test; water tests ensure that all body openings are water tight; final, detailed inspections guarantee that only top-quality cars leave the line for delivery **12.**

Fifty years of making cars goes into making these...



Chevy II comes in nine models, including a convertible and station wagons.

CHEVY II AND THE ACADIAN



The Acadian. Eight models to choose from and a choice of four power teams.

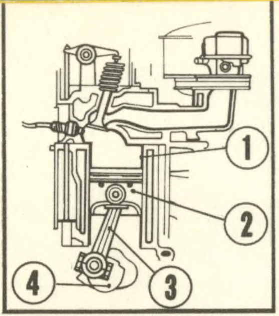
Important engineering innovations made these new 1962 cars possible—and made them *new* from the ground up. GM designers used the new Mono-Plate springs in the rear suspension. These single leaf steel springs are rolled in such a way they behave like multi-leaf springs in cushioning road shock... and they need no maintenance.

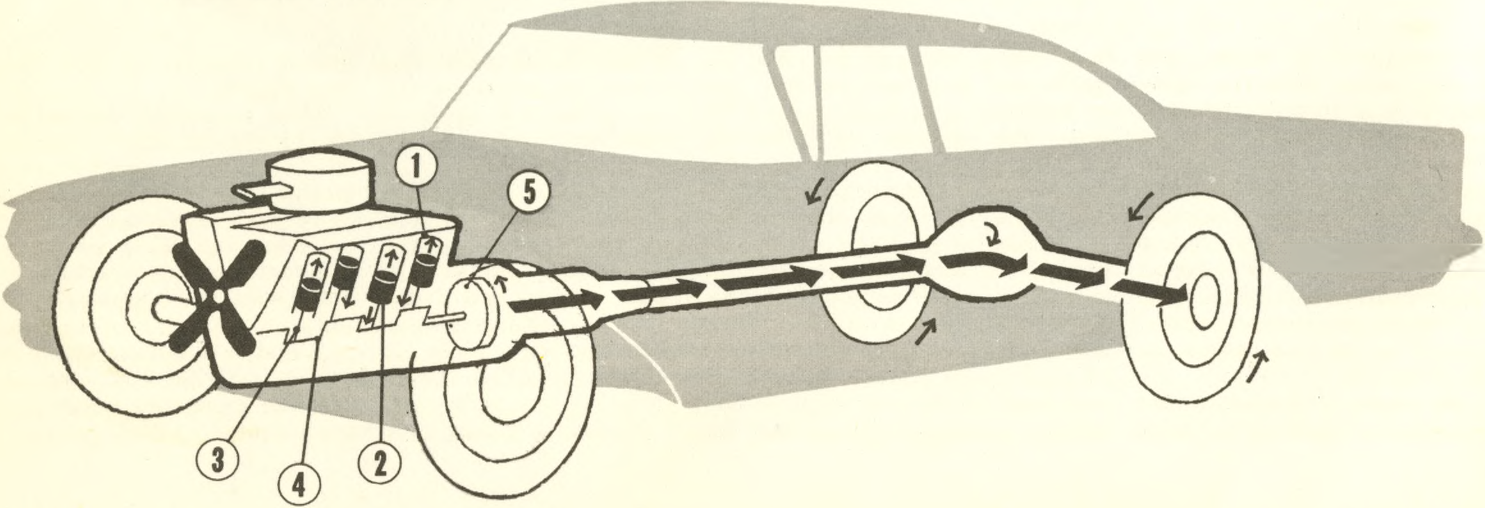
The bodies are designed to reduce maintenance costs. They are assembled from two all-welded sections for greater rigidity and less weight. The fenders bolt onto these sections, making repair or replacement simple. And every part that may come into contact with road salt is galvanized or rustproofed.

Under the hood, GM has left the choice to the motorist. He can get exactly the combination of power—performance—economy he wants in either a four- or six-cylinder engine (built in GM's Windsor plant) and GM's Synchro-Mesh transmission or a special edition of the Powerglide automatic transmission.

Chevy II and Acadian are built by General Motors at Oshawa. They are both totally new and Acadian is an exclusively Canadian car. They each have a 110″ wheelbase, an overall length of 183″ and width of 70.8″. Both cars are 55″ high.

The Chevy II and Acadian are outstanding examples of General Motors policy of producing more and better things for more people.





As we have seen during our trip through the assembly plant (on pages 10 and 11), the conventional automobile consists of two major parts—the body and the chassis. The body encloses the passenger and luggage compartments; the chassis forms a base for axles, power transmission units, wheels, steering mechanism and the actual source of power, the engine, which is . . .

the heart of your car

The power of an automotive engine comes from the burning of a mixture of gasoline and air in a small, enclosed space. When this mixture burns it expands greatly and the built-up pressure, similar to that of a giant firecracker under a tin can, is used to move a part of the engine. This movement is eventually transmitted to the rear wheels to drive the car.

An engine is a complicated mechanism made up of hundreds of pieces and attachments and here we can only consider its very basic parts. First, the cylinder (1). This is a round steel tube closed at one end. Inside the cylinder is a piston (2). The perfectly round piston is made to fit snugly, but at the same time it can slide easily up and down inside the cylinder under the pressure of burning gases. This up-and-down movement is converted into a rotary motion, necessary to propel the car, by means of a connecting rod (3) and the crankshaft (4). The connecting rod performs an action very similar to the lower part of a boy's leg when pedalling a bicycle. The upper end of the connecting rod is attached to the piston and the lower end to the crankshaft. In this way the up and down motion of the piston is converted to rotary motion in the crankshaft. Attached to the end of the crankshaft is a fly wheel (5) which serves as a power take-off to turn the rear wheels.

Most automobile engines today have six or eight cylinders. They can be arranged in one straight row (an in-line engine) or in two rows set at an angle (a V-type engine). In either case we have only one crankshaft but six or eight connecting rods. Thus with a number of cylinders in action the power impulses from the pistons occur with greater rapidity and keep the crankshaft turning.

What is it like to work for General Motors?

General Motors of Canada is a very successful business. One of the main reasons for its great success has been the willingness and ability of GM men and women to work for the things they want.

This, plus a progressive and responsible management, has meant 'more and better things for more people'—employees as well as customers. Just take a good look at some of the benefits you would share if you worked with thousands of other GM people—good salaries and hourly rates of pay, cost of living allowances and vacations with pay. You could receive Suggestion Plan payments of up to $5,000 for one suggestion.

You would work under the best and safest conditions (for example, free safety glasses keep GM plants 100% eye safe). You would eat in fine cafeterias. There are company-paid pension plans and excellent programmes covering hospitalization, medical and surgical benefits, sickness and accident plans and life insurance. In addition, for salaried personnel, there is the GM Savings-Stock Purchase Programme. General Motors also offers fine training facilities. The GM Institute, for example, provides first-rate engineering education for those who can qualify, on the co-operative plan—'you earn as you learn'. Many top personnel at General Motors are GM Institute graduates for, remember, GM seeks always to provide advancement from within the organization—for the right person opportunities are limitless.

You can see that, in this age of scientific and technological miracles, General Motors still considers men and women the real key to success.

Some facts about GENERAL MOTORS of CANADA

The 10 acre plant for Corvair at Oshawa is GM's largest capital investment in recent years. Its rapid completion established a new 'speed record' for the Canadian construction industry.

GM provides direct employment for more than 14,000 Canadians at its Oshawa and Windsor plants and its parts warehouses and zone offices across Canada. Its annual wages bill amounts to $73,000,000.

More than 180,000 individual parts for GM vehicles are stocked at GM's central warehouse in Oshawa. In addition GM has nine large parts warehouses throughout Canada.

At peak production periods vehicles come off the Oshawa assembly lines at the rate of one every 47 seconds. As many as 1,393 vehicles have been built in a single day.

Of the more than 5,000,000 vehicles on Canadian highways today almost half were built by GM at Oshawa in plants that total nearly 150 acres in size.

GM's purchases from Canadian suppliers amount to more than $1,300,000 every working day. Some 4,000 Canadian firms, employing thousands, supply materials and services for GM vehicles.

GM's first million cars were built in thirty years; the second million in 13 years; the third in only 5½ years. The fourth million, completed in June, 1961 took only 5 years to build.

To make sure mechanics in GM dealerships are fully up-to-date on new features, GM operates ten training centres across the country. There are about 1,200 GM dealers in Canada.

Through the GM Canadian Scholarship Programme (jointly supported by the seven GM companies in Canada) 14 universities receive unrestricted funds and 25 scholarships are awarded each year to students in many fields.

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